D. REMARKS

This amendment is in response to a non-final Office Action bearing a mailing date of September 5, 2006. Applicant is appreciative of the comments of the Examiner and every effort is made herein to be fully responsive to each and every item.

This response, unless otherwise noted, follows the order of the Examiner's Detailed Action and uses subheadings to indicate location of the Detailed Action information. Page numbers in the subheadings refer to Detailed Action page numbers.

The Amendments to the Claims have been maintained at a moderate level so as not to disturb the original statement of what is novel and unobvious and so as to obviate an additional search. It is respectfully urged that no new matter has been added by the changes and that the Currently Amended claims are now provided with the necessary structural and functional language to definitively set forth the invention.

INTRODUCTION

The patentability of the present disclosure is respectfully urged to be connected to what Hauer ***et al.***, U.S. Patent 6,791,274 (hereinafter Hauer ***et al.*** '274), teaches and what it does not teach.

The Applicant has modified the claims to clearly express the contribution to the directional coupler art made by this invention. First, Claim 1 is now distinguished by describing the low pass filter (LPF) as one which, in contrast to Hauer ***et al.*** '274, has a constant impedance and includes the first inductor.

The claim language describing the inductor has been moved from Claim 2 and, thus, has been previously considered. Secondly, with the Amendment the function of each of the low pass filters is set forth which language further differentiates the invention from that of Hauer ***et al.*** '274. This is supported in the specification by the operational description of low pass filter.

Page 2. Claim Rejections - 35 USC §112

In response to this claim rejection, the following actions have been taken:

a. the dependency upon Claim 1 of Claim 4 has been changed to Claim 2.

b. the description of an optional third resistor has been added to Claim 2.

c. the ***a third and a fourth resistor*** has been changed to ***a fourth and a fifth resistor***.

d. Claim 6 has been adjusted accordingly.

e. Claim 1 now has the limitation of Claim 2 relating to the

first inductor incorporated therein.

With these changes to the text it is respectfully urged that the indefiniteness by not including all enumerated resistors in the chain of dependency has been removed. Parenthetically, it is noted that function of the second and third resistor and of the fourth and fifth resistors can each be performed by one equivalent resistor (if the equivalent resistor provided can tolerate the power level).

Pages 2 and 3. Claim Rejections - 35 USC §102

The Examiner rejects Claims 1 and 5 pursuant to 35 USC §102(e) as being anticipated by Hauer ***et al.***, U.S. Patent No. 6,791,274. Hauer ***et al.*** '274 uses an LPF to reduce the level of spurious (unwanted) signals whereas the Application at hand teaches how to create a new coupler at a different frequency than the original coupler. The distinction between Hauer ***et al.*** '274 and the present Application is:

a) the present Application uses filter response to flatten the coupling response outside of useable band of the coupler. In the example shown in the specification, coupling varies by 1.9dB over 800-1000 MHZ (Application Fig. 7). After adding LPF's the variation is 1.16dB or about 39% reduction in flatness. In Fig. 1 hereof the frequency response for all three cases is shown.

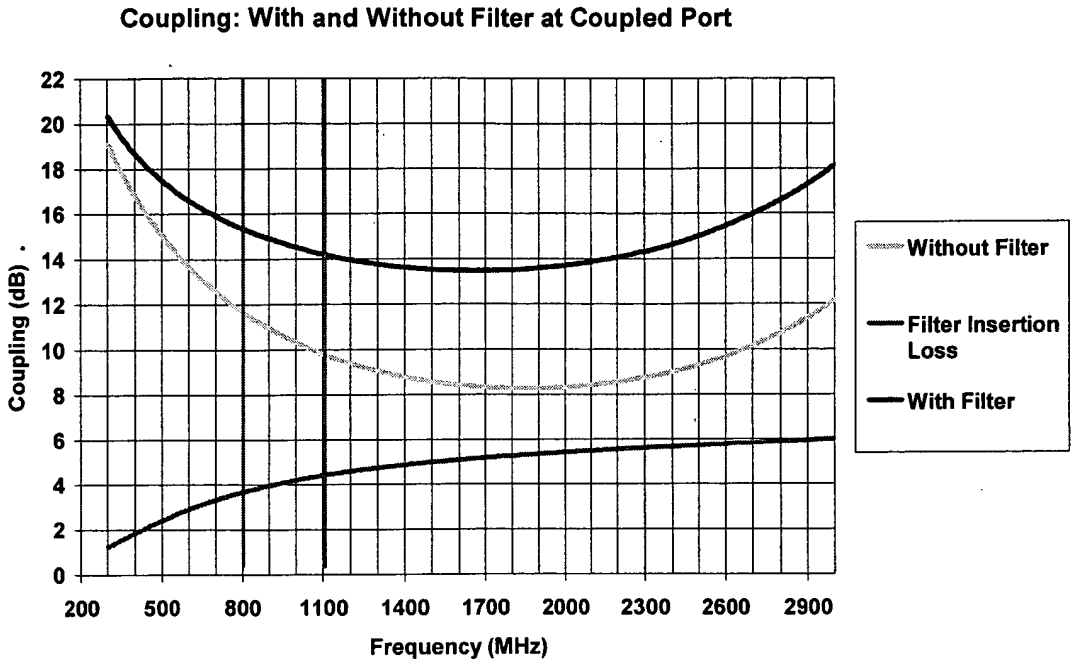

Fig 1

b) the present Application uses constant impedance filter, having a predetermined return loss in pass and stop band and thereby provides an excellent match without affecting the input-output response. Hauer ***et al.*** '274 does not teach that it is a constant impedance filter and it is respectfully urged that it cannot be deemed to be inherently a constant impedance filter. Constant impedance is crucial to maintaining good return loss in the coupled port.

Because these are elements in the Claims 1 and 5 outside the teaching of Hauer ***et al.*** '274, it is respectfully urged that the

present Application is not and cannot be anticipated by Hauer ***et al.*** '274.

Page 11. Restructuring of Claims and Allowable Subject Matter

The restructuring of claims has been taken out of order as it impacts the responses which follow.

In the Amendments to the Claims, language has been added to independent Claims 1, 10 and 19 which emphasizes the frequency shifting function of the directional coupler of the present invention. The language added to the Claims is derived, inter alia, from paragraphs **[0028]**, **[0029]**, **[0041]** and **[0055]** of the published Application.

Claim 9 has been re-written in independent form to include all the limitation of the base Claim 7 from which it originally, directly depended. With this change and the change of dependency of Claims 12 through 18 to depend directly or indirectly on subject matter said to be allowable, it is urged that Claims 9, 12 through 18, and 23 are allowable.

Pages 3 and 4. Claim Rejections - 35 USC §103(a)

The Examiner rejects Claims 2, 4 and 6 as being unpatentable pursuant to 35 USC §103(a) over Hauer ***et al.*** '274 in view of Russell ***et al.***, U.S. Patent No. 5,177,453 (hereinafter Russell ***et al.*** '453).

Russell ***et al.*** '453 uses a low pass filter at the output of a detector. At the output the RF signal detected is essentially a DC signal with some spurious unwanted signal components. The function of the filter in Russell ***et al.*** '453 is to filter the spurious unwanted signals. Russell ***et al.*** '453 does not teach about flattening the coupling response of the coupler, which teaching is found in the present application.

Filter elements shown in Russell ***et al.*** '453 are conventional low pass filters without the constant impedance filter structure as taught in the Application. While conventional low pass filters and constant impedance filters are well known, using the constant impedance low pass filter to flatten the coupling response is a novel teaching.

Especially because the teaching in the present Application is novel, it is urged that there is nothing within Hauer ***et al.*** '274 or within Russell ***et al.*** '453 that would meet the Graham v. Deere test for combining the references.

The Court of Appeals for the Federal Circuit (CAFC) held in **In re Fritch**, 23 USPQ2d 1780 (1992) that:

> A patent examiner bears the burden of establishing a **prima facie** case of obviousness when rejecting claims under 35 USC Section 103. The mere fact that the references cited by the examiner may be modified does not allow the examiner to meet his or her burden absent a suggestion in the cited art of the

desirability of the modification. Moreover the examiner may not use the claimed invention as an instruction manual so that the claimed invention is rendered obvious.

Further in this regard, no evidence has been presented in applying the prior art that would have made it obvious at the time the invention was made to a person having ordinary skill in the art to provide the combination of Applicant. In connection with the lack of evidence, where the Examiner has used in lieu of reference material terms such as *inherent, generic, mere substitution of well-known art-recognized equivalents*, it is respectfully requested that actual references be supplied. The CAFC has held that a broad conclusory statement regarding obviousness of modifying a reference, standing alone is not evidence. [Emphasis supplied.] By not adhering to an evidentiary standard, the Examiner has perhaps unwittingly curtailed the dialogue necessary to advance the prosecution of this Application.

Pages 5 through 11. Claim Rejections - 35 USC §103(a)

The Examiner has rejected Claims 3, 7, 8, 10, 12, 14, 15 and 16 as being unpatentable pursuant to 35 USC §103(a) over Hauer ***et al.*** '274 in view of Chaturverdi ***et al.***, U.S Patent No. 5,742,210 (hereinafter Chaturverdi ***et al.*** '210. Because of the restructuring of the Claims, ***supra***, this argument applies now to Claim 3.

Chaturverdi ***et al.*** '210 teaches the construction of a compact, narrow band 3dB coupler. As the Examiner indicates that the coupler has sinusoidal lines. Even combining this patent with Hauer ***et al.*** '274, there is no teaching about flattening the coupling response which the present Application teaches. As discussed above, Hauer ***et al.*** '274 also does not teach any technique for flattening coupling response. The Application at hand teaches how to create a new coupler at a different frequency than the original coupler. The arguments set forth hereinabove are re-iterated here by reference.

The Examiner indicates at page 6, lines 9, 10 and 11 that the LPF's of Hauer ***et al.*** '274 inherently provide a constant impedance. A reference showing this characteristic is requested.

It is respectfully urged that the lack of teaching of how to shift the frequency of a directional coupler when coupled with the changes in the Currently Amended claims leads to the conclusion that the claims (as amended) are allowable.

As Original Claims 7 and 8 are canceled, the rejection pursuant to 35 USC §103(a) as being unpatentable of Hauer ***et al.*** '274 in view of Gu ***et al.***, U.S. Patent No. 5,689,217 (hereinafter Gu ***et al.*** '217) only applies to Claim 3. Gu ***et al.*** '217 teaches a method of designing a coupler in which coupling can be varied by

changing the lengths of the segments. To obtain a new coupling, a new physical coupler needs to be manufactured. By knowing Gu ***et al.*** '217 and Hauer ***et al.*** '274, it is not obvious that one can modify the coupling of a coupler as taught in the present Application.

With the inclusion in Claim 1 of language indicating the frequency shifting function of the directional coupler and the use of the inductor in the LPF, it is posited that the chain of dependency in which Claim 3 is found describes a novel and unobvious device not taught by Hauer ***et al.*** '274 in view of Gu ***et al.*** '217 or the combination thereof.

It is urged that the Examiner in rejecting Claims 11, 17 and 18 using three and four references in combination is utilizing the Application as a template and has attempted to reconstruct the disclosed device. Here it is believed that in applying Section 103 the Examiner with all due respect, has seemingly ignored the Supreme Court's **Graham v. John Deere**, 383 U.S. 1,148 USPQ 459 (1966) caution about slipping into hindsight. The citing of Hauer ***et al.*** '274 in view of Chaturverdi ***et al.*** '210 and further in view of Russell ***et al.*** '453 is considered reconstructive. The citing of Hauer ***et al.*** '274 in view of Chaturverdi ***et al.*** '210 further in view of Kodim, U.S. Patent No. 6,756,859 and/or Michon ***et al.***, U.S. Patent No. 6,804,099 is considered reconstructive. In citing the

references in reconstructive manner, the Examiner has tiptoed through the field of search picking a directional coupler from one source; a low pass filter from another; a component, namely an inductor from yet another; and, a sinuous shape from still yet another. The patent to Kodim teaches about a method of biasing active antennas by using low pass filter at isolated port. It does not teach about modification of coupling by using constant impedance low pass filter as the present Application does. Similarly, the Kushitani patent teaches the design of a coupler with the coupled line forming part of the LPF, but does not teach how to shift the frequency of a directional coupler as the Application teaches. To complete the reconstructive effort, the Examiner has selected bits and pieces (not found during the search) from the one with ordinary skill in the art. After exhausting the questions relative to the teachings of each and what within each reference gravitates toward the combination, one is left with the bare fact that the combination is suggested by the Applicant's invention. No greater tribute could be paid to the inventor's ingenuity than this reconstructive effort.

CONCLUSION

With the Amendments made to the Claims, the Application is urged to be in condition for allowance. In brief, it is respectfully urged that the following conclusions are reached:

1. the Claims as amended are allowable;

2. the references do not teach shifting of frequency of a directional coupler using the structure of the present Application;

3. the restructuring of claim dependencies forms a series of dependent claims that are allowable.

4. Claim 9 (currently Amended) has been rewritten in independent form including all the limitations of the base claim and is allowable.

The Applicant's Attorney is of the belief that a response has been made to every item in the Office Action. The Examiner is requested to telephone the below-named Attorney if any question still remains.

The Applicant looks forward to an early and favorable response.

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Respectfully submitted,
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